

**Surveillance for Early Detection of Highly Pathogenic Avian Influenza
H5N1 in Wild Birds:**

2006 Montana Sampling Plan
Version 5-25-2006

By

Interagency Coordinating Committee for HPAI H5N1 Wild Bird
Surveillance in Montana

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1.0 INTRODUCTION

1.1 Broad Scale Overview

Inserted with some edits and updates from “Surveillance for Early Detection of Highly Pathogenic Avian Influenza HPAI H5N1 in Wild Migratory Birds – A Strategy for the Pacific Flyway”

Avian influenza is widely endemic in wild populations of waterfowl and many other species of birds. The emergence and spread of a Highly Pathogenic Avian Influenza (HPAI) H5N1 subtype in Asia over the past few years (hereafter called HPAI H5N1) has elevated concerns about potential expansion of this virus to North America.

Concerns of government agencies and the public are based on a range of possibilities that include sickness and mortality in wild bird populations, introduction of a disease that could devastate the poultry industry, and potential mutation of the virus into a form that could be highly infectious and pathogenic to humans—possibly the source of the next flu pandemic. Currently, public concern has been heightened by extensive media coverage about this virus in Asia, its spread to Europe, and the very small number of human infections—much of it includes speculation that migratory birds are a primary vector and will bring it to North America. Thus, government agencies, particularly state and federal wildlife agencies, are being called upon to develop an early detection system to determine if and when the virus arrives here.

Some clarifications of terms and the current situation are warranted because the terminology of avian influenza is often confusing, and it is important that a shared understanding of this disease is accurate. For purposes of this strategy, here are some key points and assumptions:

- Migratory aquatic birds are the natural reservoir for many of the 144 subtypes of avian influenza, named for their protein components hemagglutinin (H) and neuraminidase (N). Most avian influenza types are not very pathogenic, but the H5 and H7 types seem to be more pathogenic to domestic poultry.
- The terms “highly pathogenic” (HPAI) and “low pathogenic” (LPAI) refer specifically to pathogenicity to domestic poultry—testing for HPAI is documented by mortality rates in dosed poultry.
- Some avian influenza varieties may mutate into forms that become pathogenic to specific taxa (e.g., birds, swine, humans). The currently prominent HPAI H5N1 virus is highly pathogenic to some birds, particularly domestic poultry, but is not easily transmitted to people. This is primarily a bird disease that has infected a small

number of people who have been heavily exposed to infected poultry or raw poultry parts.

- The HPAI H5N1 strains have not been detected in North America. Low pathogenic H5N1 and a wide variety of other AI types have been documented in poultry and wild waterbirds.
- The degree to which migratory birds may be agents in the spread of HPAI H5N1 is unknown. Mortalities of wild birds due to HPAI H5N1 have occurred. Migratory waterfowl, however, are tolerant of avian influenza and could be vectors. Experimentally this has been shown for HPAI H5N1, and surveillance of live birds in several locations have found HPAI H5N1 in apparently normal birds (including waterfowl and gulls).
- Currently, there is inadequate information about the virulence of HPAI H5N1 in wild bird species, its persistence in wild populations, and the degree to which it can spread from bird to bird during seasonal and annual cycles. Fecal contamination is assumed to be the primary mode of transmission, and viruses can remain viable for extensive periods in cold, fresh water.
- The onset of a major human influenza pandemic could result if some form of AI—HPAI H5N1 or any other type—adapted into a form that was able to sustain easy human to human transmission. HPAI H5N1 is the most immediate threat for a global human pandemic but the likelihood of that occurring is unknown.

1.2 Montana Context

Montana overlaps with both the Pacific and Central Flyways. Each flyway council developed an early detection plan for HPAI H5N1, which were stepped down from the U.S. Interagency Strategic Plan (Interagency HPAI Early Detection Working Group 2005). This plan reflects objectives and strategies described in both flyway plans.

Montana Fish, Wildlife & Parks (MFWP) and USDA/APHIS Wildlife Services (WS) are the lead agencies (hereafter referred to as lead agencies) in Montana for sampling wild birds for early detection of HPAI H5N1. This Plan is a product of considerable coordination between the two agencies and other state and federal agencies including Montana's Department of Livestock, Department of Public Health and Human Services, and the U.S. Fish and Wildlife Service.

All of the cooperating agencies in Montana recognize this document as the sole HPAI H5N1 early detection implementation plan through which they will work in a coordinated fashion to achieve the plan's goal and objective.

2.0 GOAL AND OBJECTIVE

The goal of this plan is early detection of HPAI H5N1 in wild migratory waterfowl and shorebirds and semi-wild flocks of urban waterfowl if it occurs in Montana.

The objective of this document is to provide an implementation plan that describes priority species for sampling, locations, sampling levels, methods, and resource and communication needs for the upcoming fall migration period (July-December 2006). Depending on circumstances and funding, this plan may extend beyond this timeframe.

This plan is strictly a surveillance plan and does not address coordination and integration of a response to the discovery of HPAI H5N1 in Montana, if that occurs.

3.0 APPROACH

3.1 Priority Species for Sampling

Certain species of waterfowl and shorebirds are believed to be natural reservoirs for most kinds of avian influenza viruses, including 144 “subtypes” as well as genetic variants within each subtype (Interagency HPAI Early Detection Working Group 2005). Some of these species exhibit three or more of the following characteristics that make them priorities for early detection sampling in Montana including:

- Carry avian influenza viruses, often without outward signs of illness
- Associated with water-borne avian influenza viruses
- Migrate or move between Asia and North America
- Assimilate with birds that are associated with Asia
- Resident (urban) waterfowl flocks that assimilate with priority migrating waterfowl and people
- Occur in sufficient abundance in Montana to allow effective sampling

The following list of bird species were derived from national and flyway early detection surveillance plans (Table 1). Generally, these “priority” birds occur in Montana with sufficient abundance to provide opportunities for sampling. For the purposes of this plan, sentinel species are semi-domestic waterfowl (primarily mallards) that occur in urban settings and mix with priority migrating waterfowl.

Table 1. Candidate waterfowl and shorebird species for HPAI H5N1 surveillance in Montana, Pacific and Central Flyways combined.

Primary Species	Secondary and Sentinel Species
Tundra Swan	Mallard
Snow Goose	American Wigeon
Northern Pintail	Gadwall
Long-billed Dowitcher	Northern Shoveler
Red-necked Phalarope	
Pectoral Sandpiper	

In addition to species listed in Table 1, the Central Flyway early detection plan has identified additional priority species that occur in Montana. These may be “opportunistically” sampled as circumstances allow and include: Blue-winged Teal;

Green-winged Teal; Common Goldeneye; Greater Yellowlegs; Lesser Yellowlegs; Solitary Sandpiper; Spotted Sandpiper; and Lesser Sandhill Crane. Samples of these species are likely to be small but, when added to samples from other states, are intended to be a sufficient sample for HPAI H5N1 surveillance.

3.2 Sampling Locations

National Wildlife Refuges and Wildlife Management Areas: Sampling on national wildlife refuges or by NWR staff will initially be coordinated through Dr. Tom Roffe, Chief, Wildlife Health, with the Mountain Prairie Region of the U. S. Fish and Wildlife Service in Bozeman, Montana. FWS will select an HPAI point of contact for Montana who will help coordinate surveillance activities among the refuges under this plan.

Benton Lake NWR plans to run a pre-hunting season duck banding operation. Staff from the lead agencies will assist with these operations to retrieve and ship samples. Several refuges, yet to be determined, may be asked about the feasibility of getting some samples from hunter-killed birds during the hunting season. The lead agencies will provide assistance with collecting and processing samples.

Freezout Lake Wildlife Management Area northwest of Great Falls, in the Pacific Flyway part of the state, is expected to be an important area for obtaining samples from hunter-killed birds. This will be the main source of hunter-harvested Western Population tundra swans and Wrangel Island snow geese, both of which are primary species for sampling. There will also be several priority duck species available until the wetlands freeze over.

Benton Lake NWR, Medicine Lake NWR, Lee Metcalf NWR, and Bowdoin NWR provide waterfowl hunting and will also be focus areas for sampling hunter-harvested birds during periods of peak hunting activity.

Some national wildlife refuges and Freezout Lake WMA provide stopover habitat for migrating shorebirds. Additional investigation and coordination will be undertaken by lead agencies to determine locations and peak times for sampling shorebirds in these areas.

Urban Areas and Sentinel Flocks: Semi-domestic ducks found in several urban areas of the state attract wild waterfowl and will serve as sentinel flocks. These sites provide opportunities for live-trapping both wild and semi-domestic birds as well as environmental sampling. Sites that have been identified thus far include the following:

Great Falls	Gibson Pond and Park*
Kalispell	Woodland Park
Missoula	Bilo Pond*
Missoula	McCormick Pond
Anaconda	Washoe Park Duck Pond*
Butte	Park along I-90
Helena	Fairgrounds Pond*

Bozeman	Bozeman Ponds at MSU
Livingston	Sacajawea Park*
Billings	Fuddrucker/Fairfield Inn ponds*
Billings	Riverfront Park
Billings	Spring Creek Park

Those sites marked with an asterisk (*) are considered to be good candidates for sampling given what is known at present. Further assessment will be done for all of the above sites and any others that are identified including: number of flightless ducks; whether the flightless birds are rounded up and housed in the winter; and the number and species of wild waterfowl that typically intermingle with the resident flock. Those sites where there is considerable direct or indirect contact between wild waterfowl and people will be a higher priority. Each candidate site will require coordination with appropriate city or county agencies prior to initiating sampling.

Other Areas: Additional sampling may occur, with U.S. Fish and Wildlife Service permission, on Waterfowl Production Areas in northeastern and north central Montana. Some of these areas are stopover places for migrating shorebirds and provide waterfowl hunting opportunities until freeze up, usually in late October or early November. Some wetlands administered by the Bureau of Land Management and privately owned wetlands may also be considered, with permission, as sampling areas.

Late in the waterfowl season, after the shallow wetlands freeze over, the only areas that provide open water for waterfowl include some rivers and springs. Many of these are hunted through accesses provided by MFWP fishing access sites or through private land and may provide sampling opportunities primarily for hunter-harvested mallards. Many potential hunting areas are dispersed over the state and may be difficult to efficiently sample.

3.3 Sampling Intensity

Currently, there is no reliable information on the prevalence of HPAI H5N1 in wild bird populations. The national and Pacific Flyway plans suggest that a minimum of 200 samples would be required to detect one positive HPAI H5N1 sample in a defined population with >1,000 individuals (probability 95%) if the virus had a prevalence of only 1.5%. This hypothetical approach assumes that the population of interest is homogenous and entirely accessible for sampling, that H5N1 is uniformly distributed within that population, and that representative sampling can be done in a random or otherwise unbiased manner, which is not the expected case in wild migratory waterfowl. Because of these factors, where possible, sampling intensity will be increased over the 200-bird minimum for larger populations of wild birds (Appendix A). Some species are a priority, given their link to breeding habitats in Asia and coastal Alaska, but may provide only limited opportunities for sampling. In this case, statistically reliable sample sizes may be extrapolated to multi-state or flyway sampling efforts.

Generally speaking, sampling of shorebirds and waterfowl will begin as southerly migrations begin to occur. Some target shorebirds will begin entering Montana from breeding grounds by mid-July. Northern Pintails start early migration movements by early August. Fall duck migration typically continues through November or early December, depending on general weather conditions and weather events. Detecting arrival of these first migrants will be coordinated with agency field staff who are familiar with identifying priority species.

The lead agencies (primarily WS) will also be responsible for 1,000 environmental samples, which will be taken mostly in urban settings where semi-domestic waterfowl and wild waterfowl mix during migration. These samples will be spaced geographically and temporally over the migration period.

3.4 Sampling Strategies

This section describes several strategies that will be used to detect HPAI H5N1 in both the Central Flyway and Pacific Flyway portions of Montana. To ensure adequate coverage, geographically and temporally, it is important to spread sampling effort from flocks of priority species across the migration period and at appropriate geographic scales (Appendix A). The migration period is defined as July 15 through December 2006. Spatially, if a target population can be effectively sampled at one major staging area, sampling at many locations may not be necessary. This is, in part, why sampling efforts are being coordinated with other states through the flyway systems. Sampling a population during banding in late summer may mean that sampling hunter-killed birds at that location early in the season may not be needed.

For some species such as tundra swans and snow geese there is no banding program in Montana and no practical way of starting one, so hunter-killed birds will be the only way to obtain samples. Mid-continent sandhill cranes are a primary species and population, and although large numbers migrate through eastern Montana in the fall, there are no traditional stopping places in the state where they can be hunted effectively. Hunter-killed samples of cranes cannot be obtained in Montana. The Central Flyway Plan coordinates effort in other states where samples can be more effectively obtained. For some species at certain locations, samples of feces may at least provide composite samples for testing for the presence of HPAI H5N1. Overall, more efficient surveillance will result if an array of methods is designed in the context of state, regional, flyway, and national efforts.

Live Birds: Routine waterfowl banding operations in Montana will provide live bird sampling opportunities. Sampling priority duck species during banding would be useful for both intercepting migrant birds potentially infected with HPAI H5N1 and also for sampling locally produced ducks that may indicate local occurrence of the virus. Duck trapping and banding operations will be run August and September, prior to the hunting seasons. Duck banding operations in Montana are planned for Benton Lake National Wildlife Refuge (NWR) north of Great Falls and in the Ninepipes vicinity, both in the

Pacific Flyway portion of the state. Additional duck capture efforts may support this surveillance effort but have not been fully investigated at this time.

Mallard and northern pintail are two duck species most likely to be captured during bait trapping operations. The migration period for these species will have begun during the banding period. Both migrant and locally produced birds are important for HPAI H5N1 sampling because: (1) mallards and pintails are known reservoirs of low pathogenic viruses with higher prevalence rates than some other species; (2) juvenile ducks have the highest prevalence of LPAI among North American surveys; and (3) the rate of virus shedding is high during late summer and early migration staging.

Live capture and sampling of semi-domestic and wild waterfowl at urban sites is supported by recent research showing that domestic ducks can excrete large quantities of highly pathogenic virus without showing signs of illness, making this an effective option for detection of avian influenza. There are several sites in Montana where these sentinel flocks attract concentrations of wild migratory waterfowl that could carry and transfer HPAI H5N1. Selected sites that provide geographic representation will be sampled on a scheduled basis spread over the 5-month sample period.

Shorebirds make up 3 primary and secondary priority species for sampling. These species migrate in late summer from their nesting areas in Siberia or Alaska or are likely to mix with Asian birds during migration. There is no existing capture and banding program for shorebirds in Montana. Live capture of shorebirds by means of mist nets or other methods will be considered, with any efforts focused mainly on long-billed dowitchers, pectoral sandpipers, and red-necked phalaropes, primarily at stopover areas such as Freezout WMA. However, given the numbers and distribution of these shorebirds in the state and the reported difficulty in mist netting them, live capture may not be an effective means of sampling. Given the potential variability in terms of abundance and duration of migration through Montana, the estimated sample of shorebirds collectively is 200 birds (Appendix A).

Hunter-Harvested Birds: If HPAI H5N1 enters North America through Alaska, it could then move south via infected birds among the 150,000 swans, 1 million geese, and 12 million ducks that begin leaving Alaska in August. Waterfowl hunters in Montana typically harvest about 450 tundra swans, 65,000 geese, and 110,000 ducks each season. Once Montana's waterfowl hunting seasons start, likely September 30, 2006, there are opportunities to sample harvested birds and sampling can be spread out to some extent to different parts of the state and throughout the hunting season. Emphasis will be placed especially on species on the primary list, with efforts also on those species on the secondary list.

There are no mandatory waterfowl hunter check stations in Montana, but there are important harvest areas where hunters could be checked as they finish their hunts. This method will generate samples of several priority duck species. Northern pintails will be available mostly during the first six weeks of the hunting season, as they are an early migrant and tend to frequent shallow wetlands that freeze over early. Mallards will be

available throughout the season on a number of areas. Sampling ducks late in the hunting season would consist mostly of mallards. Western Population tundra swans and snow geese that will have a low percentage of Wrangel Island birds will also be harvested by hunters and sampled in the Freezout Lake and Benton Lake areas.

Depending on need for additional samples, lead agencies may also coordinate with hunters to voluntarily stop at one or more centrally located check stations for sampling harvested waterfowl.

Lethal Collection: Some of the highest priority species for sampling, such as Long-billed Dowitcher, Pectoral Sandpiper, and Red-necked Phalarope, are relatively abundant continent-wide but will be the most difficult to capture. Lead agencies will keep as an option to lethally collect these or other priority species, depending on ability to live trap and need for sufficient samples. A scientific collection permit for Montana Fish, Wildlife & Parks will be obtained from the U. S. Fish and Wildlife Service, and collection will be conducted according to conditions stated in the permit. Lethal collection may be the sole means of obtaining samples for some species given the difficulty of capture and the fact that they are not hunted species. Lethal collection would also make collecting samples over time and space more feasible. Given the potential variability in terms of abundance and duration of migration through Montana, the estimated sample of shorebirds collectively is 200 birds (Appendix A). Any lethally collected birds will be made available to museums or for scientific study. For example, a researcher has been found who would use feathers from some of the shorebird species for stable isotope studies to determine the migration areas used by individual birds in relation to known wintering areas.

Mortality/Morbidity Events: The primary causes of mortality in wild birds include infectious disease caused by bacterial, fungal, viral and parasitic agents, and non-infectious disease including toxicity and physical injury. Disease events in wild birds often remain invisible and unrecognized, even for those diseases that may be lethal. Investigation of disease events in wild birds is however considered to be one of the best opportunities to detect HPAI H5N1 virus if introduced into Montana by migratory birds. Increased vigilance and timely and accurate identification of causes of morbidity and mortality will therefore be required to properly guide disease investigations in the state.

MFWP will establish a 1-800 phone number and a web-based reporting system for the public to report dead or sick bird incidents. All reports and corresponding information will be accumulated in a central database. Incidents will be field investigated when reported events meet certain response criteria. These response criteria will emphasize the primary and secondary avian species identified in this plan. The HPAI Coordinator will determine appropriate response and, if necessary, contact an MFWP field biologist or WS employee for further investigation and sampling. In certain cases, a report of a single bird from a primary species may trigger a response for collection. Investigators will perform site visits and will collect and submit samples to the USGS National Wildlife Health Center (NWHC) in Madison, Wisconsin for necropsy and testing. These

collections may involve submission of a swab samples and/or or entire carcass for analysis.

In addition to general surveillance, systematic monitoring of primary migratory bird use areas may occur during staging and wintering periods. It is anticipated that up to 400 samples in Montana may be collected through response to mortality and morbidity events.

3.5 Culture Samples

Given the substantial investment of resources to implement HPAI H5N1 surveillance in Montana and the requirement for strict quality control during sample collection, there is an immediate need for training of agency personnel. The USGS National Wildlife Health Center (NWHC) and USDA have developed training materials and all MFWP personnel potentially involved in the collection of samples will be required to undergo suitable training focused on the correct and safe handling of specimens. Field personnel should follow the recommendations provided in the NWHC Guidelines for Handling Birds, Wildlife Health Bulletin #5-03 or newer: (http://www.nwhc.usgs.gov/publications/wildlife_health_bulletins/WHB_05_03.jsp).

Bird Samples: The National Strategic Plan includes procedures and protocols for the collection of tracheal and cloacal swabs as well as the collection of fecal samples, and for shipping carcasses, and all samples to laboratories (IAEDWG 2005). All personnel involved in the collection of samples will be required to adhere to these protocols.

Environment Samples: Analysis of water and fecal material from waterfowl habitat may provide evidence of HPAI H5N1 in wild bird populations. Environmental sampling is considered a reasonably cost-effective method of assessing risk to humans and poultry, one that does not require the handling or capturing of animals. While the technology to allow accurate surveillance based on water samples is still under development, fecal sampling is an established technique. Efforts are likely to focus on urban waterfowl settings and other areas of concentrated waterfowl use in Montana. Technical aspects of the collection of water and fecal samples for identification of virus are detailed in the IAEDWG, 2005. All MFWP and WS personnel involved in the collection of samples will follow these guidelines.

Lab Support: We request that samples be submitted to the CSU Diagnostic Lab, or other certified laboratory:

Colorado State University Veterinary Diagnostic Laboratory
College of Veterinary Medicine and Biomedical Sciences
300 West Drake
Fort Collins, CO 80523

Primary contact: Dr. Barbara Powers
970-297-1281
970-297-0320

CSU Diagnostic Lab also has a contingency back-up lab in California in the event they cannot process all of the samples they receive.

Up to 400 mortality/morbidity samples will be submitted to the USGS lab in Madison, Wisconsin:

National Wildlife Health Center

U.S. Geological Survey/U.S. Department of the Interior
6006 Schroeder Road
Madison, WI 53711-6223

Primary contact: Dr. Hon Ip
608-270-2464

3.6 Resources and Responsibilities

Surveillance activities described in this document will be performed primarily by personnel from the lead agencies—Montana Fish, Wildlife & Parks (MFWP) and USDA/APHIS Wildlife Services (WS). In total, lead agencies intend to collect 3,400 samples. Because these activities are largely above and beyond normal duties, temporary staff, dedicated entirely to this function, will fulfill most of MFWP's surveillance obligation, 1,000 cloacal swab samples and 400 mortality/morbidity samples. WS has an additional obligation for collecting 1,000 cloacal swab samples and 1,000 environmental samples. WS employs 21 field staff distributed across Montana. WS in Montana intends to provide MFWP with additional funds to help collect their obligation of 1000 swab samples. Collecting and submitting samples will be a coordinated and shared responsibility between the lead agencies.

Dedicated MFWP surveillance staff will include: 1) a statewide HPAI Coordinator, whose responsibility will be to track samples, enter data into centralized data storage, serve as a point contact for bird mortality/morbidity reports, determine which mortality reports merit further investigation, and supervise and coordinate field activities with appropriate agencies and staff and 2) 3 field crew members responsible for capture, collecting samples at various locations around Montana, making hunter field checks, mortality/morbidity monitoring, and tracking/submitting samples. MFWP field biologists will also provide support, particularly for mortality/morbidity sampling on an as-needed basis. WS field staff will coordinate with MFWP to avoid redundant efforts, provide mutual field support, and to assure broad systematic spatially and temporally-distributed sampling. Table 2 is a breakdown of MFWP resource needs and their associated costs:

Table 2. MFWP expenses associated with HPAI H5N1 early detection in Montana, 2006.

Expense Type	Amount	Cost
Temporary MFWP Personnel (4 surveillance technicians/6 months and 1 HPAI Coordinator at 8 months)	2.67 FTE/Benefits	\$103,500
Travel Expenses (per diem, lodging, mileage, vehicles)	\$8.5K per diem + \$14.5K lodging + \$6K rent + \$5K field bio mileage @ 10,000 miles* + 4 vehicles @ 8,000 miles apiece for \$18K	\$52,000
Misc. supplies and materials**		\$16,000
Shipping	250 packages, overnight shipping @ \$60 apiece	\$15,000
Total Sampling Cost		\$186,500
Fed. Overhead charge 16.04%		\$29,950
Grand Total		\$216,450

*In addition to field technicians, MFWP field biologists will be collecting morbidity/mortality samples in response to public calls, as coordinated by the HPAI Coordinator.

** Field supplies, safety equipment, trap materials, mist nets, optics, PDA and/or laptop computers, GPS, cell phones, bar code reader (for tracking samples and associated data)

4.0 INTEGRATION AND SUPPORT

The key to implementing a successful surveillance strategy will be cooperation and communication among state and federal agencies. Agencies directly involved in surveillance activities are USDA/APHIS Wildlife Services (WS), MFWP, and USFWS. MFWP and WS are the lead surveillance agencies as described earlier in this plan. All surveillance activities will be coordinated between the lead agencies and in communication and cooperation with other state and federal agencies. As earlier described, the lead agencies will fulfill their sampling obligations as shared responsibilities, taking advantage of each agency's unique resources and opportunities to achieve this plan's goal. In addition, cooperation may be necessary from the Montana Department of Livestock, Montana DPHHS and USDA/APHIS Veterinary Services. Collectively, all of these agencies are referred to as the Interagency Coordinating Committee for HPAI H5N1 Wild Bird Surveillance. Results from surveillance efforts will be reported to the agency partners, the MFWP Director, Montana State Veterinarian and USDA/APHIS Area Veterinarian in Charge.

4.1 Notification

Positive tests will result in immediate notification to the state veterinarian, the Area Veterinarian in Charge, the chief state public health official, and the CDC/USDA Select Agent program. Because of the importance and public impacts of a confirmation of

HPAI H5N1, notification will also go to top federal and state officials (e.g., Secretaries of Agriculture and Interior, Governor, Directors, etc.).

This document is strictly a surveillance plan and will not address coordination and integration of a response to the discovery of HPAI H5N1 in Montana. This plan assumes that the State Veterinarian, Area Veterinarian in Charge, and Public Health officials will mobilize an integrated and appropriate response to HPAI if it is discovered in wild birds. It is assumed that state/federal agency response to HPAI H5N1 will be prescribed according to existing Disaster Emergency Response Plans for Montana and/or National Emergency Preparedness Plans.

4.2 Agencies Implementing Wild Bird Surveillance

All agencies involved with surveillance will promptly direct appropriate information or public calls on mortality/morbidity occurrences to the MFWP reporting web site or 1-800 number or the MFWP HPAI Coordinator for possible field investigation.

MFWP: MFWP will serve as the primary coordinating agency for surveillance of HPAI H5N1 in wild migratory birds in Montana. MFWP will designate a person to act as the HPAI Coordinator and will provide a field crew for surveillance sampling and monitoring (see Resources and Responsibilities section). MFWP is responsible for collecting 1,000 cloacal swab samples and up to 400 mortality/morbidity samples. MFWP will submit a work plan to the funding agencies (USFWS and WS) reflective of this plan. MFWP will be responsible for coordinating development of an annual report that provides results from HPAI H5N1 surveillance activities in Montana. Direct reporting of any significant finding will be the responsibility of the HPAI Coordinator and supporting laboratories confirming the findings, as earlier described.

USDA/APHIS Wildlife Services: Wildlife Services (WS) staff will be available to collect samples at locations designated in this plan or where other opportunities arise. WS is obligated to collect 1,000 cloacal swab samples and 1,000 environmental samples in Montana. WS coordination will be accomplished through the Montana State Directors office.

While conducting routine agency activities WS will inform the State HPAI Coordinator of any unusual mortality and morbidity events within Montana.

U.S. Fish and Wildlife Service: Coordination between the USFWS agency refuge staff will be necessary to meet the Montana surveillance goal. USFWS intends to assign a point of contact for HPAI in Montana through whom MFWP and APHIS, WS personnel can coordinate surveillance activities.

Refuge staff may be directly involved in surveys for HPAI H5N1 within the refuge system. The MFWP HPAI Coordinator will coordinate with USFWS refuges to determine opportunities and provide assistance for collecting samples.

Dr. Tom Roffe, a USFWS Wildlife Veterinarian, can provide critical technical counsel as this plan is implemented.

USFWS will inform the HPAI State Coordinator of any mortality and morbidity events on refuges within Montana.

4.3 Agencies Supporting Wild Bird Surveillance

All supporting agencies will promptly direct appropriate information or public calls on mortality/morbidity occurrences to MFWP or the MFWP HPAI Coordinator for possible field investigation.

Montana Department of Livestock: The Montana Department of Livestock Diagnostic Laboratory could be incorporated into surveillance support if they develop a capacity to conduct HPAI diagnostics and become NAHLN certified.

The Montana State Veterinarian or Assistant State Veterinarians will be key contacts for MDOL. MDOL will support wild bird surveillance with technical counsel and will report any wild bird mortality or morbidity events to the MFWP HPAI Coordinator. MFWP will likewise support domestic bird surveillance as possible and report any unusual mortality or morbidity events in game birds or other domestic birds in captivity for which MFWP is responsible.

USDA/APHIS Veterinary Services: The Area Veterinarian in Charge will be the key agency contact for Veterinary Services in Montana. Area Veterinary Medical Officers (VMO's) will be informed of the plan and may occasionally participate in wild bird surveillance as needed. Veterinary Services will provide supportive information about domestic bird surveillance to help direct the wild bird surveillance in order to improve surveillance efficiency. USDA/APHIS/VS will inform the MFWP HPAI Coordinator of any unusual mortality and morbidity events observed by VMO's while conducting routine duties within Montana.

Montana Department of Public Health and Human Services: Communications between MFWP and DPHHS are important to assure any significant findings are reported immediately.

Bird Surveillance will be coordinated as best it can be with surveillance activities of the Montana DPHHS within the constraints of the U.S. Strategic and Flyway Surveillance plans.

4.4 Interagency Coordinating Committee for Wild Bird Surveillance

To facilitate coordination and cooperation, an Interagency Coordinating Committee for HPAI H5N1 Wild Bird Surveillance has been established in Montana. The committee

will assist the MFWP HPAI Coordinator in planning and implementing surveillance and reporting results. Representatives from various collaborating agencies have participated in development of this plan will continue to communicate as the plan is implemented. In part, the committee will discuss coordination of various agency communication plans and will help disseminate wild bird health information and surveillance results to the public. Given the high level of public and agency concern, and the level of media coverage about the disease, Montana cooperators will collaborate and coordinate their public information products and outreach programs.

The Interagency Committee is made of agency representatives from MFWP, USFWS, USDA/APHIS Wildlife Services, USDA/APHIS Veterinary Services, MDPHHS and MDOL. University experts or other key technical experts may be involved as needed. A representative from the MFWP Communication and Education Division will participate in each meeting. Other agency Public Information Officers will be notified of meetings and may elect to attend.

5.0 AVIAN INFLUENZA PUBLIC INFORMATION PLAN

This section describes an information outreach strategy that will be circulated via multiple media outlets for both agency and public consumption, including the following background and information points:

5.1 Purpose/Opportunity

Montana Fish, Wildlife & Parks (MFWP) and USDA/APHIS Wildlife Services (WS) will participate in a national "early detection" effort with several state and federal agencies to detect arrival of the HPAI H5N1 strain of avian influenza in migratory birds, if that should occur in North America.

MFWP will begin wild bird surveillance efforts in late July. The effort will primarily focus on migratory birds from Alaskan and Asian breeding areas as well as species that mix with those birds during migration.

The movement of the HPAI H5N1 Asian strain in some wild bird migrations has been indicated by the European and some Asian data, but the significance of wild birds in establishing new foci of poultry infections is unknown and only been documented in limited cases (e.g., France). FWP will participate in a federal effort to monitor wild birds and their possible connection to the spread of the HPAI H5N1 virus.

It is important to understand that avian influenza is primarily a disease of birds, not humans. An early detection of the avian influenza virus in wild birds does not signal the start of a pandemic among people.

This information plan strives to impart that a variety of strains of avian influenza will be detected in Montana, that birds commonly contract flu, and not all avian influenza is the Highly Pathogenic Avian Influenza, H5N1 subtype, Asian lineage.

5.2 Objectives of Public Information Plan

- Public awareness of Montana's wild bird surveillance and early detection effort.
- Public understanding that there are several strains of Avian influenza and that FWP will likely detect flu, including low pathogenic H5N1, in wild birds, but that it does not signal the start of a pandemic among people nor indicate the Asian lineage of HPAI is present.
- Public understanding that detection of HPAI H5N1 in birds in Montana or elsewhere does not signal the start of a pandemic among people.
- Increase understanding among all Montanans that even the HPAI H5N1 Avian Influenza is primarily a disease of birds, not humans.
- Increase understanding among hunters that avian influenza should not preclude them from hunting this fall.

5.3 Audience

- MFWP staff
- Staff of other agencies
- Elected officials
- Montana residents
- Resident and nonresident hunters

The following will help with delivery of appropriate messages:

- MFWP's web site, magazine (Montana Outdoors), and TV spots
- Media
 - Montana newspaper outdoor editors
 - Montana radio and television news
- Local sportsmen's clubs
- Statewide sportsmen's and outdoors organizations
 - Montana Wildlife Federation
 - Montana Outfitters and Guides Association
 - Montana Bowhunters Association
 - Montana Rifle and Pistol Association
 - Pheasants Forever
 - Duck Unlimited
 - Pheasants Unlimited
 - Montana Trappers Association
 - Local RMEF Chapters
 - Montana hunting license providers
 - Montana Audubon

5.4 Messages

Montana's early detection effort

- Montana will begin its early detection effort for avian influenza in late July
- About 2,000 birds—including tundra swans, snow geese, pintails, and mallards--will be sampled in 2006
- Sampling will emphasize the Pacific Flyway
- Wildlife biologists will sample live birds during normal waterfowl banding operations
- Hunters may participate during the fall hunting seasons by allowing sampling of harvested birds when requested of them, but they should not expect a health approval for their birds
- Use common sense practices in handling, cleaning, and preparing wild fowl
- Because samples of sick or dead wild birds could increase the probability of detecting the HPAI H5N1, biologists will investigate reports of waterfowl and shorebird deaths.
- All sample submissions will be coordinated through the MFWP Wildlife Research Laboratory. Viral testing will be completed at a federally accredited diagnostic laboratory
- Federal funding for the early detection efforts is provided by USDA/APHIS Wildlife Services and the U.S. Fish and Wildlife Service

Avian Influenza

- There are 144 subtypes of avian influenza based on the surface proteins, hemagglutinin and neuraminidase.
- Migratory ducks, geese, and shorebirds are natural reservoirs for many strains of avian influenza.
- Most avian influenza types are of little concern to public health professionals.
- Reported cases of humans contracting the disease from contact with wild birds are rare and associated with aerosolization of the virus, likely through defeathering processes.
- HPAI H5N1 is most lethal to poultry, and outbreaks originated from chickens in China, not from wild birds.
- MFWP's early detection effort will be focused on finding HPAI H5N1

5.5 Techniques/Strategies

- Develop Q&A and related fact sheets specific to the effort. Person responsible: Palmer – July
- Develop MFWP Avian Influenza flyer. Persons responsible: Duran, Palmer – July
- Develop MFWP Avian Influenza website. Persons responsible: Palmer, Stephenson – July
- Prepare news releases for distribution to all media outlets in Montana. Persons responsible: Palmer, Robson – May/July/August/September/October.
- Distribution of the release to Montana's sportsmen's clubs. Person responsible: Robson – May/September

- Distribution of the release and flyer to state hunter and conservation organizations with the intent of it being included in their publications. Person responsible: Aasheim – August
- Brief in Montana Outdoors Magazine. Person responsible: Dickson – Sept/Oct
- Information in Hunter Education newsletter. Person responsible: Baumeister – Fall edition.
- Flyers delivered to license providers. Persons responsible: Robson – August
- License provider notification of waterfowl hunters' possible participation at field checks. Persons responsible: Aasheim, C.Carroll, H. Worsch – Aug/Sept/Oct
- Inclusion in upland game bird and waterfowl hunting regulations. Person responsible: C. Lere.
- Pursue opportunities with Travel Montana. Person responsible: Aasheim.
- T.V. Outdoors Reports. Persons responsible: Gurnett, Greely – July/Sept.
- Radio PSA's. Person responsible: Tipton – Late summer.
- Montana Outdoors Radio. Person responsible: Aasheim – Late summer.
- Flyers at MFWP offices. Person responsible: Robson.
- Local media opportunities. Persons responsible: RI&EPMs
- Providing flyers and information at fairs and outdoor shows. Persons responsible: RI&EPMs

6.0 REFERENCES

- Central Flyway Council. 2006. Surveillance Plan for the Early Detection of Highly Pathogenic Avian Influenza-H5N1 in Migratory Birds in the Central Flyway. Unpubl. Draft Rept. 19pp.
- Interagency HPAI H5N1 Early Detection Working Group. 2005. An early detection system for HPAI H5N1 highly pathogenic avian influenza in wild migratory birds: U.S. Interagency Strategic Plan. Unpubl. Final Draft Rept. Report to the Department of Homeland Security, Policy Coordinating Committee for Pandemic Influenza Preparedness. <http://www.usda.gov/documents/wildbirdstrategicplanpdf.pdf>
- Pacific Flyway Council. 2006. Surveillance for early detection of highly pathogenic avian influenza H5N1 in wild migratory birds: a strategy for the Pacific Flyway. Pacific Flyway Council. [c/o USFWS], Portland, OR. Unpubl. Rept. 13pp.+ appendices. http://pacificflyway.gov/Documents/AIS_plan.pdf

APPENDIX A

Table A-1. Potential HPAI H5N1 surveillance sampling in Montana, July-December 2006.

Location	Method	Tundra Swan	Pintail	Snow Goose	Shorebirds	Mallard	Wigeon	Shoveler	Gadwall	Total
Live Bird / Collection Sampling										
Benton Lake NWR	Bait traps		100			100				200
Ninepipes Vicinity	Bait traps					50				50
Freezeout Lake	mist nets (shorebirds)				50					50
Various Urban Sites	Bait traps					330				330
Misc. location	Bait traps/mist nets (shorebirds)		50		50	30				130
Hunter-killed Bird Sampling/Lethal Collection Sampling										
Freezout Lake	Field checks	150	60	150		70	30	30	30	520
Benton Lake NWR	Field checks		20			20	20	20	20	100
Bowdoin NWR	Field checks		20			20	20	20	20	100
Medicine Lake NWR	Field checks	20	20			20	20	20	20	120
Ninepipes NWR	Field checks		20			20	20	20	20	100
Misc. location	Field Checks		20			80	30	30	40	200
Misc. location	Lethal Collection Sampling				100					100
Mortality Events										
Statewide	Mortality collection (up to 400)		100			150	50	50	50	400
Total for Bird Sampling		170	410	150	200	890	190	190	200	2400
Environmental Samples										0
Various Urban Sites	Field sampling					1000				1000
Total for Environmental Sampling		0	0	0	0	1000	0	0	0	1000
Total Samples										3400